# Lot Acceptance Testing (LAT)

Lot Acceptance Testing provides screening and qualification tests to enable the use of Exxelia Ohmcraft's standard parts in flight applications (Aerospace/Space).

Exxelia Ohmcraft can screen and qualify its resistor products to MIL-PRF-55342, MIL-PRF-49462, NASA EEE-INST-002 (Level 1 or Level 2) or a custom test plan. LAT Testing includes but is not limited to:

- Thermal Shock
- Power Conditioning
- High Temperature Exposure
- Solderability
- TCR
- Load Life
- Short Term Overload
- Terminal Strength
- Resistance to Solvents

## Electrical Specifications

| | | |
|---|---|---|
| **Value R** | R Ω | Resistance Value in kΩs, MΩs, GΩs, or TΩs |
| **Tolerance** | ± X% at V | Resistance Tolerance measured at specified voltage |
| **TCR** | < [Ordering Coder TCR] ppm/ºC (Hot to TmaxºC, Cold to TminºC)<br>< 2*[Ordering Coder TCR] ppm/ºC (Hot to 125ºC, Cold to -55ºC) | TCR referenced to 25ºC |
| **Working Voltage** | V | Voltage across the resistor during application operation |
| **Max Voltage Rating** | V | Maximum Voltage based on resistance value or case rating |
| **Max Power Rating** | W | Maximum Wattage based on resistance value or case rating |

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## Conformance Testing

### Pre-Cap Visual Inspection

| | |
|---|---|
| Prior to Conformance Test | 13 pcs |

### Conformance Test – 100% Screening

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|---|---|
| **Visual Inspection**<br>• Magnification: 30x to 60x | 100% |
| **Mechanical Inspection** | 3 pcs. (minimum) |
| **DC Resistance**<br>• Per MIL-STD-202, Method 303<br>• Measured at specified test voltage for resistance tolerance | 100% |
| **Thermal Shock**<br>• Per-MIL-STD-202. Method 107, Test Condition B (modified)<br>• 5 cycles (MIL-PRF-55342), 10 cycles ( NASA level 2) or 25 cycles (NASA level 1)<br>• Min. temp -55ºC, Max temp 125ºC | 100% |
| **High Temperature Exposure (SMT)**<br>• 100 hours at 125ºC | 100% |
| **Power Conditioning (Leaded)**<br>• 100 hours at Working Voltage at 25ºC | 100% |
| **Final DC Resistance** | 100% |

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| | |
|---|---|
| • Per MIL-STD-202, Method 303<br>• Measured at specified test voltage for resistance tolerance | |

**Conformance PDA: 5% (NASA Level 1 or MIL-PRF-55342), 10% (MIL-PRF-49462) or 15% (NASA Level 2)**

## Qualification Testing

| Group | NASA Sample Size (Level 1 / Level 2) |
|---|---|
| **Group 1**<br>• Conformance Testing: Basic Screening | 100% |
| **Group 2**<br>• Solderability<br>  • MIL-STD-202, Method 208<br>• Resistance to Solvents (Leaded)<br>  • MIL-STD-202, Method 215 | 3 pcs / 3 pcs |
| **Group 3**<br>• Temperature Coefficient (TCR)<br>  • Per MIL-STD-202, Method 304<br>  • Reference Temperature: 25ºC<br>• Low Temperature Storage<br>  • -65ºC no load dwell for 24±4 hours<br>  • +25ºC ambient no load dwell for 2-8 hours<br>• Low Temperature Operation<br>  • -65ºC no load dwell for 1 hour<br>  • Working Voltage for 54 minutes<br>  • +25ºC no load dwell for 24±4 hours<br>• Short Time Overload<br>  • 2X Working Voltage for 5 seconds | 10 pcs / 6 pcs |

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|---|---|
| **Group 4**<br>• Resistance to soldering heat<br>  • MIL-STD-202, Method 210, Test Condition B (modified)<br>  • 260ºC for 20 seconds<br>• Terminal Strength (Leaded)<br>• MIL-STD-202, Method 211 Test Condition C<br>• 16 ounces ± 1 ounce for 10 seconds | 9 pcs / 6 pcs |
| **Group 5**<br>• Shock (Leaded)<br>  • MIL-STD-202, Method 213B, Test Condition I<br>• Vibration (Leaded)<br>  • Per MIL-STD-202, Method 204, Test Condition D | 9 pcs / 6 pcs |
| **Group 6**<br>• Load Life<br>  • Per MIL-STD-202, Method 108<br>  • Working Voltage for 1000 or 2000 hours at 25ºC | 12 pcs / 9 pcs |
| **Group 7**<br>• Resistance to Bonding Exposure (SMT)<br>  • Solder mounted to a ceramic test plate<br>  • 4-12 hours stabilization at 25ºC | 10 pcs / 5 pcs |
| **Group 8**<br>• No Applicable Tests | |

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| | |
|---|---|
| **Group 9**<br><br>• High Temperature Exposure<br>  • 125ºC for 100 hours | 5 pcs |

## Custom Configurations Available Upon Request

Please consult with our knowledgeable sales staff for help specifying custom parts to meet your needs.

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